

Phlaeothripidae (Thysanoptera) new to South Africa, with descriptions of new genera and species

by

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Podothrips graminum Priesner.

1937 *Podothrips longiceps* Jacot-Guillarmod (in. part).

On receiving Priesner's description, I restudied my specimens of *P. longiceps* m. and found one macropterous male to belong to *graminum*. Comparison with two of Dr. Priesner's paratypes, which he was kind enough to send me, proves it without doubt to be *graminum*. This specimen was taken at Potgietersrust, Transvaal, 29-V-1933, on grass (*J. C. Faure*).

Karnyothrips melaleucus (Bagnall).

I have two macropterous female specimens of *Karnyothrips* before me which most probably belong to this species. These were collected at Port St. Johns, Pondoland, Cape Province, on 19-IV-1935, among dry leaves (*C. Jacot-Guillarmod*).

Liothrips gymnosporiæ Priesner.

I sent Dr. Priesner some specimens of a *Liothrips* to compare with this *gymnosporiæ*, as I thought them to be either identical with, or very close to this species. I must thank Dr. Priesner for having compared them with his specimens; he states: „Your specimens are somewhat larger, fore femora somewhat stouter, double fringe somewhat richer. But these are only relative differences”. I possess a number of specimens of this species, collected as follows:

Cape Province: Fort Cox Agricultural School, Kingwilliamstown, foliage of *Gymnosporia* sp. (probably *numarosa* Syzsz.); (det. Miss I. C. Verdoorn), on 29-III-1938 (*C. Jacot-Guillarmod*).

Transvaal: Pretoria, foliage of *Gymnosporia buxifolia* Szysz., (det. Miss I. C. Verdoorn), on 7-XII-1938 (*Miss A. F. Hean*).

This is a very common species on *Gymnosporia buxifolia* in Pretoria.

Cercothrips after Priesner.

I have 22 specimens (males and females) before me which belong to this species. Five of the specimens Dr. Priesner was kind enough to determine for Prof. Faure. These specimens were collected at Durban, Natal, in curled leaves of *Ficus natalensis*, on 5-IX-1922 (J. C. Faure).

At Escombe, near Durban, Natal, the writer collected on *Ficus Petersii* Warb. numerous larvæ, pupæ and a few adults, (April 8th., 1939). The larvæ were generally found grouped together in large numbers, forming conspicuous bright red colonies on the surface of the leaves. The curling of some leaves, in which a few larvæ were found, was probably due to a species of *Gynaikothrips* which was found in great numbers in such curled leaves.

This species may prove to be the same as *Gigantothrips turneri* Bagnall from Port St. Johns, Cape Province; if it does prove to be the same after authentic material or the types have been compared, then Bagnall's species will fall into synonymy.

ZULUIELLA gen. nov.

Body not reticulate. Head about one-and-a-half times as long as wide, somewhat produced between the two basal antennal segments. Vertex not protruding and the median ocellus not overhanging, cheek spines and warts absent. Eyes small, distinctly bulging, not produced ventrally, the head distinctly constricted at the hind angles of the eyes. Ocelli forming an obtuse angled isosceles triangle. Postocular setæ distinct, shorter than the eye, rather widely separated, expanded at the tip. Mouth cone short and rounded, reaching about the middle of the prosternum. Antennæ rather heavy, eight-segmented, VIII not pedicellate; all sense cones moderately long. Prothorax about three-quarters the length of the head and less than twice as wide (including the coxæ) as long; anterior margin not thickened; epimera not fused with the pronotum; all setæ present, expanded at the tips. Legs rather short, fore femora and tibiæ normal, unarmed; fore tarsi with a distinct tooth near the base. Wings broadest near the base, not constricted at the middle. Abdomen broadest at about segment V; tube shorter than the head, more or less conical, without long clothing hairs, its terminal setæ short.

Genotype: *Zuluella distincta* sp. n.

This genus, as pointed out by Dr. Priesner, resembles in general appearance *Hoplothrips* (*Trichothrips*) from which it may be separated by the shape of the setæ, and the strongly constricted head behind the eyes, the latter character reminding one of some Glypto-

thripini, e.g. *Sagenothrips* Pr., from which it may be separated by the broader antennæ, the shorter sense cones and the eighth antennal segment not being pedicellate. „*Cryptothrips*” fuscicauda Trybom seems to be closely related to the present form, but may be separated by the reticulations, the narrower antennæ and the prothoracic setæ being knobbed and not expanded. *Trichothrips natalensis* Trybom may easily be separated by the shape of the head, the unarmed fore tarsi, and the pointed prothoracic setæ, while *Trichothrips transvaalensis* Hood also differs in the shape of the head, the narrower antennæ and the pointed setæ.

Zuluella distincta sp. n. (Fig. 1, 2).

Female (macropterous). ... Length about 2 mm. General colour brownish yellow. Head uniformly brownish yellow, slightly darker between the eyes and the antennæ. Antennal segments I and II paler and more yellow than the head; III brownish yellow, paler on the pedicel; IV and VIII yellowish brown, gradually becoming darker towards the apex of the antenna, VIII the darkest. Prothorax brownish yellow, the same shade as the head, pterothorax brownish yellow, shaded with darker brown at the sides. Abdomen pale brownish yellow at the base, gradually becoming darker and more brown caudad, so that segments VII to IX are distinctly brown; tube, dark brown in the middle, yellowish brown at the base and paler brown at the apex. All legs yellow, the femora slightly shaded with pale brown on the outer margins. Wings hyaline except the extreme bases of the fore pair which are shaded with brown. All setæ pale yellow except those on the ninth abdominal segment which are shaded with brown at the base, and the terminals which are completely shaded with brown. Mesodermal pigmentation very scant, where present red.

Head distinctly longer than wide, 1.5 times as long as width at eyes, which is about the same as the greatest width across the cheeks. Cheeks evenly rounded from the eyes to the base of the head, distinctly narrower at the hind angle of the eyes which is 0.84 the greatest width. Surface of head smooth, not reticulate. Cheek spines absent. Eyes small, about 0.3 the length of the head, distinctly bulging, in the holotype the measurements in μ as follows: length 61, width 38—41, interval 61. Post-ocular setæ minute; post-ocular setæ well developed, expanded at the tip, in the holotype 49 μ long, 102 μ apart and 23 μ from the hind margin of the eye; dorsocephalic setæ minute, nearer together and slightly caudad to the post-ocular setæ. Posterior pair of ocelli about 33 μ apart and their fore margin in a line which would mark off about the anterior fifth of the eyes; median ocellus on a very slight prominence thus directed more or

less forward, about $21\ \mu$ from the posterior ocelli. *Antenna* about 1.7 times as long as the head; segment III asymmetrical, with a bent pedicel, about 1.66 times as long as wide, slightly shorter than IV which is 1.62 times as long as wide, and the longest segment of the antenna; segment VIII broadest at base, thus more or less broadly joined to VII; shapes and chaetotaxy of segments as in figure. Sense cones distributed on inner (outer) surfaces as follows: III 1 (1), IV 2 (2), V 1 (1 + 1), VI 1 (1 + 1), VII one on dorsum; in the right antenna of the holotype they are III 1 (2), otherwise normal. Sense area on segment II within the apical half of the segment. Mouth cone short, broadly rounded, just about reaching the middle of the prosternum.

Prothorax shorter than the head, along the median line of the pronotum about 0.74 the length of the head and, including the coxae, about 1.83 times as long as wide. Surface smooth; median thickening absent; epimera not fused with the pronotum. Usual setae present, expanded at the tip, in the holotype measuring as follows in μ : antero-marginal 37, antero-angular 32, mid-lateral 45, epimeral 57—63, postero-marginal 53, coxal 41. Pterothorax wider than the prothorax, slightly narrowed posteriorly; mesonotum with indistinct reticulations anteriorly. *Wings* not narrowed in the middle, fore wings about 13 times as long as width at middle; duplicated cilia on its hind margin absent. Subbasal setae on the fore wing expanded at the tip, more or less forming a right-angled triangle, their measurements in the holotype in μ as follows: a) 25, b) 22, c) 29. Fore legs rather short, slightly enlarged, femora and tibiae unarmed, tarsus with a large curved tooth, slightly shorter than the width of the tarsus; middle and hind legs normal, rather short.

Abdomen broadest at segment V where it is broader than the pterothorax, thence gradually narrowing to the tube. Wing-retaining setae represented by a pair of straight setae, expanded at the tip and about $45\ \mu$ long. Pores on terga I-IV in the holotype 71, 45, 32, $40\ \mu$ apart respectively. Tube short and conical, about 0.63 the length of the head and 1.68 times as long as its own greatest subbasal width which is about twice its least apical width. All major setae on segments II-VI expanded at the tip; those on VII expanded at the tip except the external lateral pair which are pointed; the dorsal setae on VIII expanded at the tip while the lateral pairs, those on IX and the terminal are pointed. Longest seta on segment IX shorter than tube, 100—100 μ long. Longest terminal seta 82—97 μ long.

Measurements of female (holotype) in mm. ... Length (distended) 2.30; head, median dorsal length 0.212, width across eyes 0.141, least width at hind angles of eyes 0.118, greatest width across cheeks 0.141; prothorax, median length of pronotum 0.156, width (including coxae) 0.284; pterothorax, greatest width 0.307; abdomen, greatest

width (segment V) 0.322; tube, length 0.133, greatest subbasal width 0.079, least apical width 0.037.

Antennal segments	1	2	3	4	5	6	7	8
Lengths in μ	32	40	53	55	51	50	45	29
Widths in μ	40	37	32	34	29	26	24	13

Total length of antenna 0.355 mm.

Described from three macropterous females, collected at Hluhluwe, Zululand, two in „grass sweepings” on 2-III-1937 (*C. Jacot-Guillarmod*) and one in „grass sweepings mostly *Themeda triandra*” on 22-II-1937 (*C. Jacot-Guillarmod*).

The affinities of this species are discussed under the genus.

AGROTHRIPS gen. nov.

Head narrow, more than 1.5 times as long as broad, smooth; cheeks subparallel, with no spines; vertex not elevated or overhanging; ocelli absent; post-ocular setæ pointed, placed close to the hind margins of the eyes and cheeks. Antennæ eight-segmented, broad, segment III with a shelf-like ringlet near the base, VII the longest segment; VIII broadest at the base thus rather closely connected with VII; sense cones small and difficult to see; sense area on II near the apex. Mouth cone broadly rounded, attaining about the middle of the prosternum. Prothorax not transverse, including the coxæ about one-and-a-half times as wide as long and not quite three-quarters the length of the head; median dorsal thickening absent; antero-marginal, mid-lateral and coxal setæ vestigial, antero-angular setæ very short, weak and pointed; epimeral and postero-marginal setæ normal, pointed. Suture between the meso- and metanotum absent. Wings absent. Fore legs short, slightly enlarged; fore tarsus with a forwardly directed, curved tooth (as in *Karnyothrips*) in both sexes; middle and hind legs short. Abdomen long; tube short, about half the length of the head.

Genotype: *Agrothrips priesneri* sp. n.

Although the specimens are apterous, there is little doubt that this form belongs to the Haplothripini, closely allied to *Apterygothrips* Pr., *Cephalothrips* Uzel and *Bagnalliella* Karny; from all three it may be separated by the shape of the third antennal segment, the *Karnyothrips*-like tooth on the fore tarsus, the fused condition of the metathorax, and the seventh antennal segment being the longest of the segments. In the arrangement of the sense cones it appears to come nearest to *Cephalothrips*. The tooth of the fore tarsus suggests *Karnyothrips* Watson, but from this genus the

present one differs in the shorter anal setæ, the shape of the third antennal segment and the absence of wings. The shelf-like ringlet near the base of the third antennal segment allows comparison with *Hadothrips* Pr. and *Priesneria* Bagn.; it differs, however, according to Dr. Priesner, who was kind enough to examine this form, from the latter in not having enlarged fore and hind femora, and from the former in that form having long, slender antennæ and legs, transverse pterothorax, no tarsal tooth and knobbed bristles.

***Agrothrips priesneri* sp. n. (Fig. 3, 4).**

Female (Apterous). Length about 2 mm. General colour yellow except for the following: antennal segment IV slightly darker; V brownish yellow, tinged with brown at the apex and the lateral margins; VI yellowish brown, paler near the base, the extreme base having a brown ring; VII and VIII brown. Tube brown with the extreme base abruptly yellow. Each tarsus with a black spot and the extreme apices of the maxillæ black. All setæ hyaline. Mesodermal pigmentation absent.

Head much longer than wide, 1.79 times as long as the width across the eyes and 1.73 that at the greatest width across the cheeks; smooth; vertex not elevated nor overhanging; cheeks subparallel, slightly converging to the base of the head where the width is 0.88 the greatest width across the cheeks; a narrow but distinct sub-basal thickening present. Eyes evenly curved with the cheeks, rather flat, about 0.3 the length of the head, their measurements in μ as follows: lengths 59, width 26, interval about 63. Ocelli absent. Post-ocular setæ pointed, 40 μ long. 95 μ apart and 11 μ from the posterior margin of the eyes, rather close to the lateral margin of the head. No other conspicuous setæ on the head. *Antennæ* 1.50 times as long as the head, broad; segment II longer than III which is asymmetrical and with a shelf-like ringlet near the base, 1.44 times as long as wide, subequal to VI and longer than VIII but shorter than IV and V which are subequal, and VII which is the longest of all segments; IV 1.54 times as long as wide, V 1.64 and VII 2.30 times as long as wide; sense cones small and difficult to see, distributed on the inner (outer) surfaces as follows: III 0 (1), IV 1 (1), V 1 (1), VI 1 (0 + 1), VII one on the dorsum. Mouth cone short and broadly rounded, reaching about the middle of the prosternum.

Prothorax along the median line of the pronotum about 0.71 the length of the head and, including the coxæ, 1.54 times as wide as long; surface of the pronotum smooth; median thickening absent; epimera not fused with the pronotum. Setæ greatly reduced, the antero-marginals, mid-laterals and coxals vestigial, the antero-marginals 13 μ long, pointed, the epimerals 47 μ and the postero-marginals about 26 μ , both pointed. Pterothorax narrower than the pro-

thorax (including the coxæ); the suture between the meso- and metanota obsolete; wings absent. Legs short, fore legs slightly thicker than the middle and hind pairs; fore tarsus armed with a forwardly directed curved tooth similar to that in *Karnyothrips*.

Abdomen long and narrow, widest at about segment IV where it is distinctly broader than the pterothorax as well as the prothorax. Distances apart of the pores on terga I to IV in μ as follows: 63, 18, 18, 20 respectively. Tube short and stout, 0.52 the length of the head and 1.91 times as long as the greatest subbasal width which is 1.83 times the least width at the apex; the sides more or less straight, clothing hairs absent. Longest setæ on segment IX 164 μ long, longer than the tube or the terminal setæ which are 143 μ long and thus also longer than the tube. All abdominal setæ pointed, those on segments II—VII rather inconspicuous.

Measurements of female (holotype) in mm. ... Length (distended) 2.06; head, median dorsal length 0.202, width across eyes 0.113, greatest width across cheeks 0.117, least width at base 0.103; prothorax, median length of the pronotum 0.143, width (including the coxæ) 0.220; pterothorax, greatest width 0.171; abdomen, greatest width (segment IV) 0.241; tube, dorsal length 0.105, greatest subbasal width 0.055 (least apical width 0.030).

Antennal segments	1	2	3	4	5	6	7	8
Lengths in μ	32*	42	36	40	41	36	46	29
Widths in μ	33	31	25	26	25	22	20	11

Total lengths of antenna 0.302 mm.

* This is the total length of the segment, the length of the segment visible outside its socket in the head being only 21 μ .

Male (Apterous). Length about 1.2 mm. In colour as well as in structure the male is identical with the female except for the generally smaller size, thus the description of the female will also hold for the male. Unfortunately both males in hand have been slightly pressed out of shape so that the widths of the head, prothorax, pterothorax and abdomen are not true.

Measurements of allotype (male) in mm. ... Length (distended) 1.36; head, median dorsal length 0.148, width across eyes 0.094, greatest width across cheeks 0.103; eye, length 0.045, width 0.022, interval 0.049; post-ocular setæ, length 0.026, distance apart 0.084, distance from posterior margin of eye 0.008; prothorax, median length of pronotum 0.116, width (including coxæ) 0.166; pterothorax, greatest width 0.169; abdomen, greatest width (segment V) 0.182; tube, dorsal length at least 0.079, greatest subbasal width 0.042, least apical width 0.024; longest seta on abdominal segment IX, length 0.136; longest terminal seta, length 0.118; pores on terga

I—IV, distances apart 0.043, 0.016, 0.011, and 0.013 respectively.

Antennal segments	1	2	3	4	5	6	7	8
Lengths in μ	26	37	28	32	32	29	40	29
Widths in μ	28	25	18	21	21	20	16	9

Total length of antenna 0.248 mm.

Described from three specimens, one female and two males, all apterous, collected at Hluhluwe, Zululand, as follows: 2 males on the grass *Themeda triandra* Forsk on 24-I-1937 (C. Jacot-Guillarmod); 1 female from grass sweepings on 22-II-1937 (C. Jacot-Guillarmod). The affinities of this form have been discussed under the genus.

I take pleasure in dedicating this interesting new form to Dr. Priesner of Cairo, Egypt.

***Dichætothrips xosa* sp. n. (Fig. 5, 6).**

Female (Macropterous). Lengths about 3.5 mm. General colour dark brown. Head very dark brown, slightly paler at the base. Antennal segment I dark brown, paler than the head; II dark brown, paler at the apex; III yellow for the basal half, apical half shaded with brown which becomes darker apically; IV brown, extreme base yellowish and the rest of the basal half slightly paler than the apical half; V—VIII dark brown, stalk of V paler, VII and VIII slightly paler than V and VI. Prothorax and pterothorax dark brown tinged with yellow, distinctly paler than the head. Abdominal segment II brown tinged with yellow, darker at the sides, the abdomen thence gradually becoming darker to the tube, which is almost black, and darker than the head; segments II—V darker along the sides. All femora and middle and hind tibiae dark brown, paler than the head; fore tibiae yellowish brown, paler along the inner margin, the pale portion becoming wider at the base and at the apex; fore tarsi yellow, slightly tinged with brown on the outer margin; middle and hind tarsi dark greyish brown. Wings completely hyaline. Cheek spines dark brown; all other spines and setæ of a pale brownish yellow, the terminals being brown at the base. Mesodermal pigmentation bright red.

Head longer than wide, 1.31 times as long as the greatest width across the cheeks; vertex not produced; cheeks subparallel, slightly converging near the base to form a basal collar; dorsal and lateral surfaces with indistinct cross lines, thus giving a slightly roughened appearance to the cheeks, which are set with about six small pointed spines, about 13 μ long. Post-ocular setæ long, blunt, 169 μ long, 164 μ apart and about 15 μ from the posterior margin of the eye; post-ocular setæ about 1.5 the length of the post-ocellars which are also blunt, 107 μ long, 51 μ apart and about 20 μ from the posterior

margin of the posterior ocelli; dorsocephalic setæ rather weak and pointed, $36\ \mu$ long, $102\ \mu$ apart and about $87\ \mu$ from the eye. Eyes about 0.3 the length of the head, somewhat flattened laterally, the postero-angular ommatidia larger than the rest, measurements of eyes in μ as follows: length 92, width about 56, interval about 102; anterior margin of the posterior pair of ocelli placed in a line which would mark off about the anterior quarter of the eyes. $77\ \mu$ apart, $38\ \mu$ from the median ocellus and about $15\ \mu$ in diameter. *Antennæ* stout, about 1.8 times as long as head; segment III 2.97 times as long as wide and 1.43 times as long as IV; IV 2.03 times as long as wide and 1.05 times as long as V; from III gradually becoming shorter until VIII which is the shortest of the segments; shape and chaetotaxy of segments as in figure; sense cones short (the outer on III $21\ \mu$ long), distributed on the inner (outer) surfaces as follows: III 0 (1) plus 1 ventrally, IV 1 (1) plus 1 ventrally, V 1 (1 + 1), VI 1 (0 + 1), VII one on dorsum. Mouth cone broadly rounded, reach about the middle of the prosternum.

Prothorax along the median line of the pronotum 0.67 the length of the head, and, including the coxæ, 2.20 times as wide as long smooth; the usual setæ present, long and rather blunt, except the antero-marginals which are vestigial, and the coxals which are represented by two thinner and one thicker spine $23\ \mu$ and $13\ \mu$ long respectively; two setæ present on the epimeron, the usual long one and a shorter pointed seta $33\ \mu$ long; measurements in μ of the other setæ as follows: antero-angular 72, mid-lateral 174, epimeral 174, postero-marginal 154. Pterothorax wider than the prothorax (including the coxæ), sides converging posteriorly; frontal half of the mesoscutum cross-wrinkled, otherwise like the metascutum, almost smooth. Fore wing about 13 times as long as width at the middle, slightly expanded apically, with 15—16 duplicated cilia on the hind margin. Two conspicuous, blunt, subbasal setæ present with a third short pointed one between them, their measurements in μ as follows: a) 97, b) 16, c) 102, their distances apart a-b $24\ \mu$, b-c $17\ \mu$. Fore legs moderately enlarged, the fore femur $300\ \mu$ long and $136\ \mu$ wide, fore tibiæ $211\ \mu$ long and $62\ \mu$ wide, fore tarsus with conspicuous beak-like tooth, slightly shorter than the width of the tarsus; fore femur with short stout spines on its hind outer angle and a long thin seta about in the middle of its outer margin. Middle and hind legs normal.

Abdomen slightly wider than the pterothorax, widest at segments IV and V, sides subparallel from II-V, then converging to the tube; tergum I slightly net-like; the distances of the pores on terga I—IV in μ as follows: 38, 33, 44, 54, respectively. Tube more strongly narrowed at about the apical sixth and conspicuously constricted at the apex, about 1.14 times as long as the head and about

2.9 times as long as width at the base which is nearly three times that at the apex. Longest setae on segment IX shorter than the tube, $300\ \mu$ long and the terminals shorter than these, $233\ \mu$ long.

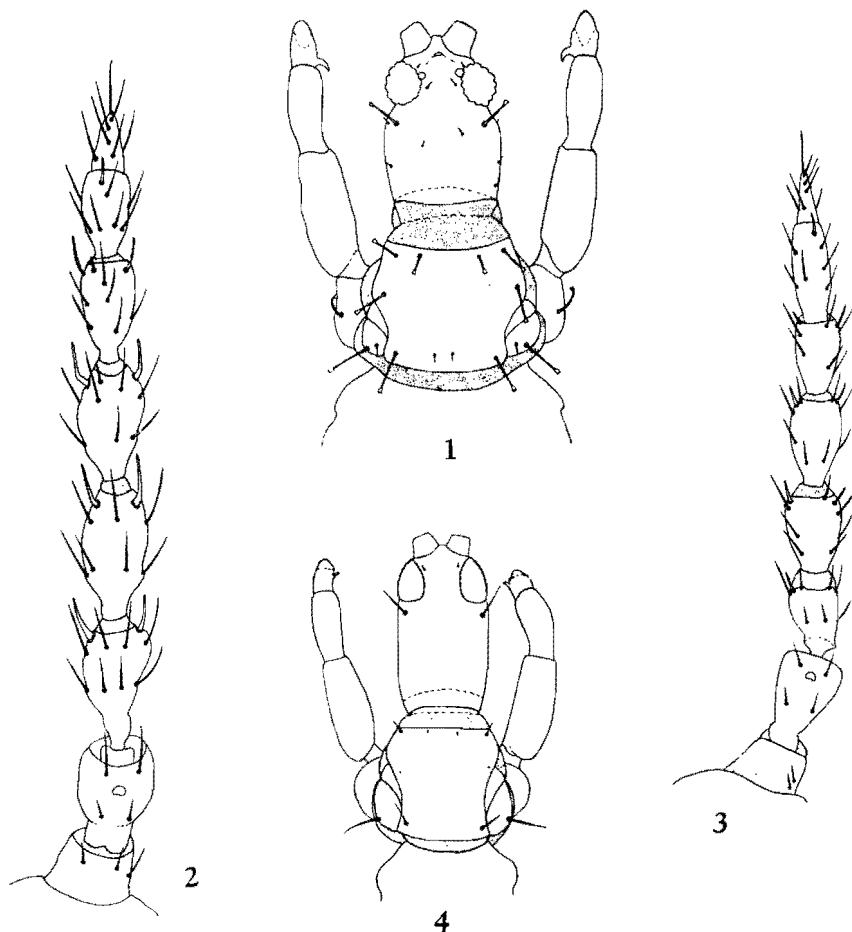


Fig. 1. *Zuluella distincta* sp. n., head and prothorax of female paratype.

Fig. 2. *Zuluella distincta* sp. n., left antenna of female holotype.

Fig. 3. *Agrothrips priesneri* sp. n., left antenna of female holotype.

Fig. 4. *Agrothrips priesneri* sp. n., head and prothorax of female holotype.

Measurements of holotype (female) in mm. Length (distended) 3.67; head, median dorsal length 0.311, width across eyes 0.225, greatest width across cheeks 0.237, width across basal collar 0.228, width at base of antenna 0.112; length of inter-antennal process

0.028; prothorax, median length of pronotum 0.207, width (including coxæ) 0.455; pterothorax, greatest width 0.522; abdomen, greatest width (segments IV and V) 0.544; forewing, length 1.284, width at middle 0.102; tube, length 0.356, greatest subbasal width 0.123, least apical width 0.054.

Antennal segments	1	2	3	4	5	6	7	8
Lengths in μ	51	70	113	79	75	71	55	47
Width in μ	50	43	38	39	37	34	26	15

Total length of antenna 0.561 mm.

Described from one macropterous female collected at the „Manor House”, Fort Beaufort, Cape Province, in dry pods of *Cassia lævigata* L. on 30-III-1938 (*C. Jacot-Guillarmod*). This species seems to be rather rare; a thorough search was made but no other specimens could be found.

The present species differs from *D. brevicollis* Hood, the genotype, in that *brevicollis* has the fore margin of the pronotum thickened, rudimentary antero-angular setæ and the antennal segment IV longer than III; *D. beelsoni* Moulton differs in the paler fore tibiæ, the slightly shaded wings and the head being 1.5 times as long as broad. *D. williamsi* Karny has strong cheek spines and 40 duplicated cilia on the fore wing. *D. penicillatus* Priesner has strong cheek spines and pedicels of antennal joints 6 and 7 broader. I am greatly indebted to Dr. Priesner for examining this species for me and giving me the above comparisons. He further compared it with a new undescribed species of his from the Congo, which differs in the yellow-brown fourth antennal segment, longer and more slender head, somewhat narrowed towards the base, and more conical tube, which is less strongly constricted apically.

Elaphrothrips édouardi sp. n. (Fig. 7, 8).

Male (brachypterous). ... Length about 5. Omm. distended. General colour very dark brown to black. Head uniformly dark brown to black. Antennal segment I dark brown, a shade paler than the head; II dark brown, paler at apex and outer margin; III yellow, shaded with brown for about the apical fifth; IV brown, paler for the median third, this median portion sometimes of a distinctly yellowish tinge; V—VIII dark brown, the same colour as the head. Prothorax dark brown to black. Pterothorax dark brown to black except the membranous parts which are reddish brown. Abdomen dark brown. Fore coxæ and femora dark brown, paler than the head; all trochanters greyish yellow; fore tibiæ dark yellowish brown, paler at the extreme base; fore tarsi brownish yellow; middle and hind femora dark brown; tibiæ dark brown with the extreme bases

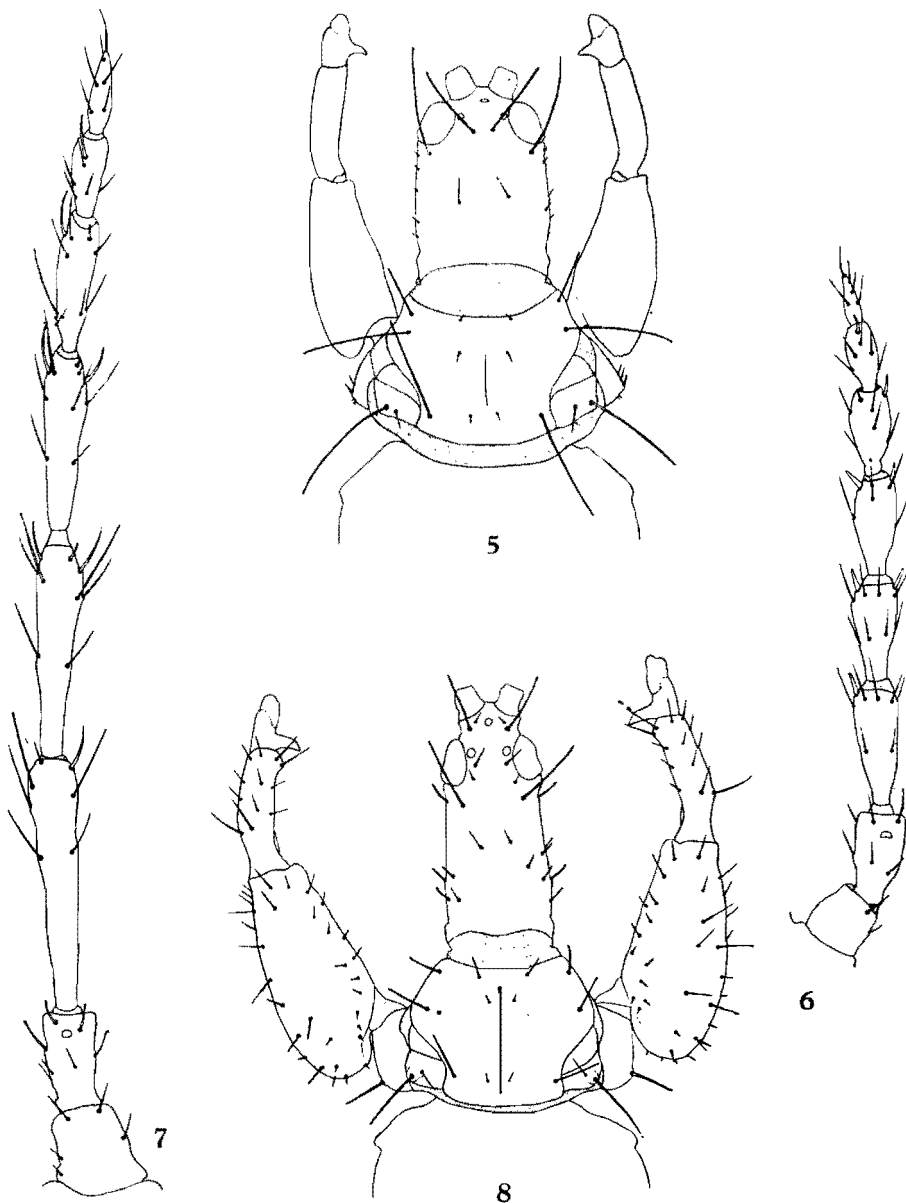


Fig. 5. *Dichætothrips xosa* sp. n., head and prothorax of female holotype.

Fig. 6. *Dichætothrips xosa* sp. n., left antenna of female holotype.

Fig. 7. *Elaphrothrips edouardi* sp. n., right antenna of male paratype.

Fig. 8. *Elaphrothrips edouardi* sp. n., head and prothorax of male paratype.

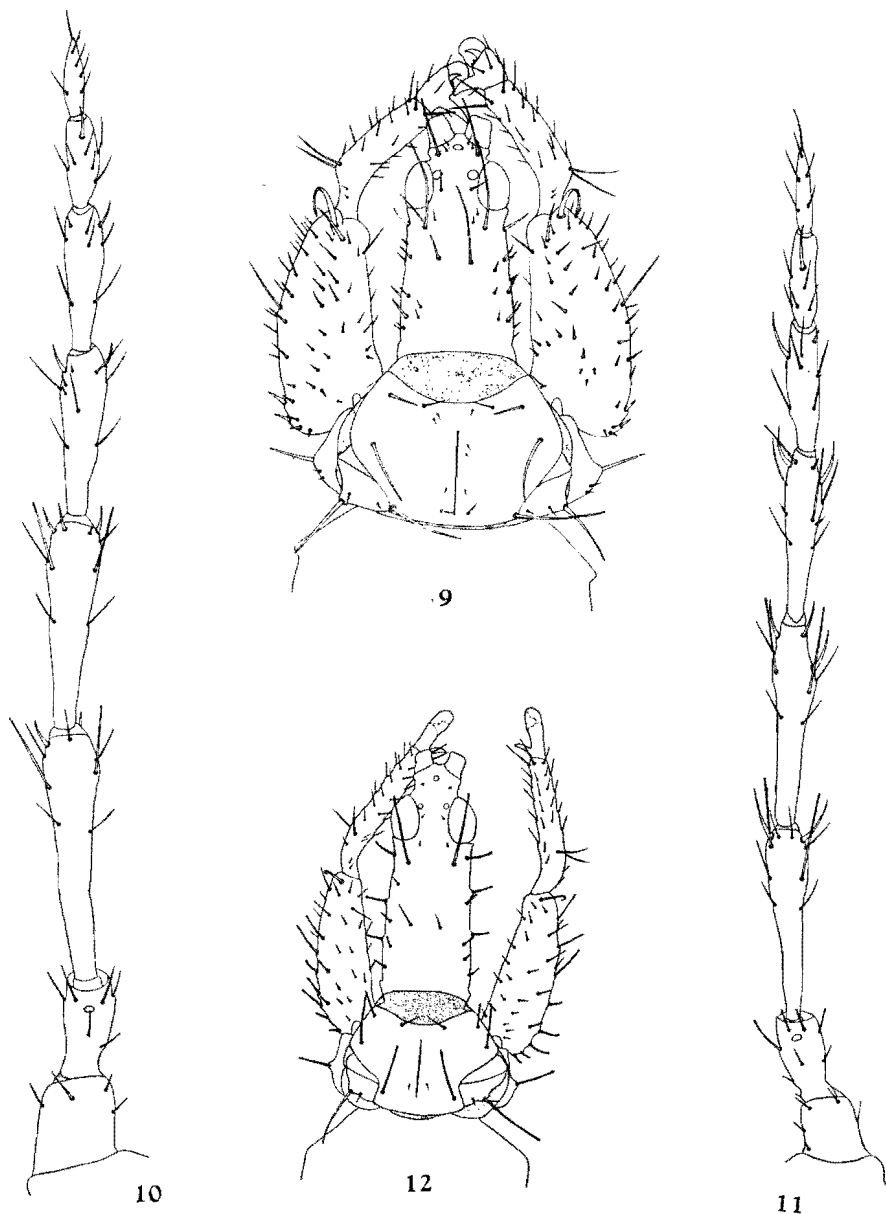


Fig. 9. *Elaphrothrips niger* sp. n., head and prothorax of male paratype.

Fig. 10. *Elaphrothrips niger* sp. n., left antenna of male paratype.

Fig. 11. *Elaphrothrips transvaalensis* sp. n., right antenna of male holotype.

Fig. 12. *Elaphrothrips transvaalensis* sp. n., head and prothorax of male holotype.

paler; tarsi greyish brown. Head and prothoracic setæ tinged with brown; abdominal setæ, (excepting the terminals which are dark brown at the base) tinged with yellow. Mesodermal pigment present, bright red.

Head 2.15—2.35 times as long as width at the eyes and 2.0—2.2 times as long as the greatest width across the cheeks, which is near the base; weakly produced beyond the eyes, the process about 0.28—0.33 as long as the greatest width of the head across the cheeks, about 1.64—1.96 as wide at base as its own median length and 1.70—2.03 times as wide at the base of the antennæ as its own median length, nearly as broad at the base as at the base of the antennæ, sides concave. Cheeks not subparallel, fairly straight diverging from shortly behind the eyes (at the origin of the first cheek spines) to near the bases, flaring as usual to the eyes, forming short but usually distinct tempora; the length of the cheek about 1.60—1.65 the least width of the head, set with about four or five slightly knobbed major setæ, the anterior pair the longest, 38—51 μ long. Ante-ocular setæ about 130 μ long, similar to the post-oculars. Post-oculars pointed, placed about in a line which would mark off the middle of the eye, about 36—51 μ long, i. e. about equal to the dorsocephalics (33—49 μ) which are placed about 143 μ from the eye and 72 μ apart. Post-oculars slightly broadened at the tip, about 140 μ long, 138 μ apart and about 36 μ from the posterior margin of the eyes. Eyes prominent, rather flattened, with a slight notch near the posterior external angle, only 0.22 the length of the head; those of one of the paratypes measuring as follows: lengths 123 μ , width 69 μ , interval 107 μ . Ocelli of the posterior pair with their fore margins in a line which would mark off about the anterior quarter of the eyes, their diameter 21 μ , interval 69 μ and distance from the median ocellus 61 μ . *Antenna* slender, about 1.6 times as long as the head, segments V—VII produced ventrally at the apex; III about 4.76—5.38 times as long as its own width and 1.2—1.3 times the length of IV which is about 3.9—4.2 times as long as wide and 1.1—1.2 times the length of V; shape and chætotaxy of segments as shown in figure. Sense cones slender and short (outer one on III about 40 μ long), distributed on inner (outer) surfaces as follows: III 1 (1), IV 1 (2) plus 1 ventrally, V 1 (1 + 2), VI 1 (0 + 1), VII 1 on dorsum. Mouth cone short, attaining about the middle of the prosternum; the acute labrum not quite reaching the broad rounded anterior margin of the labium.

Prothorax along median line of the pronotum about 0.5 times as long as the head and (including the coxæ) about twice as wide as long, very faintly sculptured along the posterior margin and the sides. Epimeron not fused with the pronotum. Usual setæ present, all slightly knobbed, excepting the antero-marginals which are

pointed, measuring as follows: antero-marginal 33—41 μ , antero-angular about 50—60 μ , mid-lateral 44—92 μ epimeral 102—133 μ , postero-marginal 77—105 μ , coxal 54—110 μ ; the epimerals arising from low tubercles. Fore legs enlarged, in the holotype measuring as follows: fore femora, length (width) 511 (210) μ , fore tibiae length (width) about 154 (85) μ ; fore tibiae with a distinct swelling on the inner surface near the apex; fore tarsi with a strong backwardly-curved tooth near the base, slightly longer than the width of the tarsus. „Sickle-shaped” spine at the apex of the fore femora absent, other setae slightly knobbed at the tip, those on the external basal angle measuring about 50 μ in length. Middle and hind legs normal. Pterothorax wider than the prothorax (including the coxae). Wings pad-like with two setae measuring about 79—87 μ and 154 μ respectively.

Abdomen rather broad, distinctly broader than the pterothorax, evenly narrowing from the second segment to the tube; the lengths in μ in the holotype of the segments VI—IX about 255, 244 and 189 respectively. Longest setae on segment IX constantly longer than the tube, 378—511 μ long. Tube 0.66—0.71 the length of the head and 2.68—2.90 its own greatest subbasal width which is slightly more than the apical width. Terminal setae shorter than the tube, 300—367 μ long.

Measurements of holotype (male) in mm. ... Length 4.77 distended; head, median dorsal length 0.522, width across eyes 0.243, width across cheeks at posterior angles of eyes 0.235, least width behind eyes 0.223, greatest width across cheeks near base 0.253, width across basal collar 0.258; head process in front of eyes, length 0.072, width at base 0.133, width at base of antenna 0.143; prothorax, median length of pronotum 0.284, width (including coxae) 0.551; pterothorax, greatest width 0.589; abdomen, greatest width (at segment II) 0.789; tube, dorsal length about 0.367, greatest subbasal width 0.128, least apical width 0.064.

Antennal segments	1	2	3	4	5	6	7	8
Length in μ	59	79	205	166	143	97	67	72
Width in μ	68	42	41	41	38	30	28	20

Total length of antenna 0.888 mm.

Female (brachypterous). Length 3.6 mm. General colour similar to that of male, differing in that the fore tibiae are dark and antennal segment IV is never distinctly paler in the middle. In structure it is also similar to the male, differing from the male in the points given below. The head is relatively shorter 2.02—2.26 times as long as wide across the eyes and 1.88—2.11 as long as the greatest width near the base; it is always narrower across the basal collar than

across the greatest width near base; cheeks relatively shorter, 1.45—1.63 times as long as the least width of the head behind the eyes. The head projection in front of the eyes somewhat shorter, 1.72—2.03 times as wide at base as long. Cheek spines shorter, the first 31—41 μ long. Antennal segment VIII as compared with VII longer.

Prothoracic setae longer, their lengths in μ as follows: antero-marginal 31—51, antero-angular 36—72, mid-lateral 87—102, epimeral 118—159, postero-marginal 102—123, coxal 51—74. Setae on fore legs weaker; tooth on fore tarsus very weakly developed, represented by an obtuse-angular swelling. Abdomen broader and not narrowing down so evenly to the tube. Tube relatively longer, 0.77—0.85 times the length of the head. Longest setae on abdominal segment IX longer, 400—500 μ long.

Measurements of allotype (female) in mm. — Length 3.6 (normal); head, median dorsal length 0.539, width across eyes 0.246, width across cheeks a hind angle of eyes 0.241, least width behind eyes 0.230, greatest width across cheeks near base 0.261, width across cheeks near base 0.261, width across basal collar 0.248; head process in front of eyes, length 0.072, width at base 0.136, width at base of antenna 0.143; prothorax, median length of pronotum 0.278, width (including coxae) 0.544; pterothorax, greatest width 0.656; abdomen, greatest width (segment) 0.789; tube, dorsal length 0.433, greatest subbasal width 0.069.

Antennal segments	1	2	3	4	5	6	7	8
Length in μ	59	72	197	161	136	97	67	79
Width in μ	68	42	40	41	37	32	29	21

Total length of antenna 0.868 mm.

Female (macropterous). The macropterous form of the female is identical with the brachypterous form except for the fully developed clear wings, with 17—26 duplicated cilia on the fore wing and subbasal setae measuring as follows: a) 71—77 μ , b) 77—82 μ , c) 169 μ ; the first two are blunt and the third is pointed. Fore wing about 1.6 mm. long.

Described from 38 specimens, 15 males (all brachypterous) and 23 females (15 brachypterous and 8 macropterous) all collected in Pretoria, Transvaal, as follows: under bark of orange tree, 23-II-1939 (*E. Bedford*); on a dead branch of lemon tree, 21-I-1939 (*E. Bedford*); *Duranta* flowers, 24-I-1939 (*Miss A. F. Hean*); under bark of orange, 15-III-1939 (*E. Bedford*).

I take great pleasure in naming this new species after my father, whose interest and constant encouragement have always been of great help to me. There is little doubt that this species is viviparous as one of the females contained two well-developed larvae in the abdomen.

The present species may be separated from all other South African species (except *E. oculatus* Moulton, described from Abyssinia and now recorded from South Africa) by its short head, just about twice as long as width near base. From *E. gnidiicola* (Hesse) and *E. powelli* Jac.-Guil., the only previously known species with dark fourth antennal segments, it may further be separated by the absence of a „sickle-shaped” spine on the fore femora of the male, the shorter head process before the eyes, and the absence of a roughened area on the pronotum of the male. From *E. maynei* Pr. it differs in the paler antennal segment. *E. jeanneli* Bagn. and *E. laticeps* Bagn. differ in the paler IV and V antennal segments and the longer tube, while *E. breviceps* Bagn. differs in the shorter head, the greater number of duplicated cilia on the fore wing (44 compared with 24—26) and the shorter head process in front of the eyes. The species, however, to which the present one appears to be most closely related is *E. oculatus* Moulton from which it differs as follows: — 1) the longer tube, 2) the paler head and prothoracic setæ, 3) the longer post-ocellar setæ as compared with the dorso-cephalic setæ (36—51 : 36—49 μ as compared with 21 : 56 μ), 4) the longer setæ on abdominal segment IX of the female, 5) abdominal tergum VII longer than VIII compared with shorter than VIII in the males of *oculatus*.

Elaphrothrips oculatus Moulton (Fig. 13).

1928. Moulton, Ann. Mag. Nat. Hist., (10), II, p. 243.

Male (hitherto undescribed) (macropterous). Length 4.8 mm. (distended). General colour dark brown to black except the following: antennal segment II slightly paler at the apex, III pale brownish yellow with about the apical third shaded with brown, IV dark brown with the basal half a shade paler; fore tibiae and tarsi dark yellowish brown, the tooth of the tarsi the palest; articulation of the middle and hind legs greyish. Wings hyaline. Head and prothoracic setæ dark brown; abdominal setæ yellow with the outer pair on segment IX and the terminals shaded with brown at the base.

Head 2.31—2.39 as long as the width across the eyes and 2.17—2.23 as long as the greatest width across the cheeks near the base; weakly produced in front of the eyes, the process about 0.30—0.32 as long as the greatest width of the head across the cheeks, about 1.63—1.75 as wide at base as long and 1.72—1.88 as wide at base of the antennæ as long, slightly narrower at base than at the base of the antennæ, sides more or less straight. Cheeks diverging from shortly behind the eyes to near the base, flaring as usual to the eyes, forming short tempora. Head at the basal collar slightly wider than at its widest across the cheeks. Cheeks about 1.78—1.84 times

as long as the least width of the head a short way behind the eyes, set with about 5 slightly knobbed spines, the first the longest, 51—56 μ long. Post-ocular setæ slightly expanded near the tip, about 174—192 μ long, 49 μ from the eye and 133 μ apart; anteo-cellular setæ similar to the post-oculars, about 138 μ long. Post-ocular setæ small, pointed, about 21 μ long, much shorter than the dorsocephalic which are 56 μ long, 77 μ apart and 159—174 μ from the posterior margin of the eye. Eyes prominent, slightly bulging, with a slight notch near the posterior externa angles, about 0.25 the length of the head; their measurements in one cleared specimen as follows: length 143 μ , width 77 μ , interval 100 μ . Ocelli of the posterior pair with their fore margins in a line which would mark off about the anterior third of the eyes, their diameter about 21 μ , interval 69 μ and their distance from the median ocellus 74 μ . Antennae slender, about 1.5—1.7 times as long as head; segments V—VII slightly produced ventrally at the apex; segment III about 4.51—5.11 times as long as wide and 1.22—1.29 times as long as IV; IV about 4.05—4.07 times as long as wide and 1.18—1.22 times as long as V. Sense cones short (outer on III 36—41 μ long) and slender, their distribution on inner (outer) surfaces as follows: III 1 (1), IV 1 (2) plus 1 ventrally, V 1 (1 + 2), VI 1 (0 + 1), VII 1 on dorsum. Mouth cone short, reaching about the middle of the prosternum, the acute labrum not quite reaching the broadly rounded fore margin of the labium.

Prothorax along the median line of the pronotum about 0.56 the length of the head and 2.04 as wide (including the coxæ) as long; faintly reticulate along the anterior and posterior margins, along the sides and median thickening. Usual setæ present, slightly knobbed excepting the fore marginals which are pointed; their measurements in μ as follows: antero-marginals 31, antero-angular 59, mid-lateral 79, epimeral 128, postero-marginal 102, coxal 102, the epimerals on slight tubercles and the coxals on distinct protuberances. Fore femora and tibiæ enlarged; in addition to the usual either blunt or slightly knobbed setæ and spines, a thick spine present at the outer hind angle about 41 μ and 10 μ wide at base; „sickle-shaped” spine at apex absent; tarsus with a strong tooth, longer than the width of the tarsus, and with a slight backward curve. Middle and hind legs normal. Wings well developed, fore wing about 1.51 mm. long and 0.123 mm. wide at middle, with 25—28 duplicated cilia; the subbasal setæ measuring as follows: a) 51—56 μ , b) 72 μ , c) 138—154 μ , the first two blunt and the third pointed. Pterothorax about as broad as the prothorax including the coxæ.

Abdomen broader than the pterothorax, broadest at segment II, thence gradually narrowing to the tube, the lengths of terga

VII—IX in μ as follows: 261, 274, 212, respectively. Longest setæ on segment IX about 456—473 μ long, constantly longer than tube which is about 0.75 the lengths of the head, 3.2 as long as the greatest subbasal width which is about twice the least apical width. Terminal setæ 344—367 μ long, shorter than the tube.

Measurements of allotype (male) in mm. Length 4.77 (distended); head, median dorsal length 0.600, width across eyes 0.251, width across cheeks at hind angles of eyes 0.238, least width behind eyes 0.223, greatest width across cheeks near base 0.264, width across basal collar 0.266; head process in front of eyes, length 0.082, width at base 0.138, width at base of antennæ 0.151; prothorax, median length of pronotum 0.289, width (including coxæ) 0.589; pterothorax, greatest width 0.589; abdomen, greatest width (segment II) 0.622; tube, dorsal length about 0.433, greatest subbasal width 0.133, least apical width 0.066.

Antennal segments	1	2	3	4	5	6	7	8
Length in μ	72	79	210	171	141	92	69	74
Width in μ	75	45	42	42	40	34	30	20
Total length of antenna 0.908 mm.								

Female (macropterous). Length about 4. Omm. General colour similar to that of male except that segment IV of antenna is uniformly dark brown; the fore legs are the same colour as the middle and hind legs, generally only a dark brown and not black. Structurally the two sexes are also very similar, differing in that the female has a relatively shorter head, about 2.10—2.19 as long as width across eyes and 1.92—2.05 as long as the greatest width across the cheeks, the head being always narrower across the basal collar than at the greatest width across the cheeks; head process in front of eyes shorter, 1.80—1.97 times as wide at base as long; cheek relatively shorter, 1.60—1.77 times as long as the least width of the head behind the eyes; cheek spines shorter, the first 31—36 μ long. Prothorax along the median length of the pronotum relatively shorter, 0.43 the length of the head, and (including the coxæ) 2.32—2.42 as wide as long; prothoracic setæ usually longer, measuring as follows: antero-marginal 56 μ , antero-angular 56 μ , mid-lateral 107 μ , epimeral 159 μ , postero-marginal 128 μ , coxal 87 μ ; fore legs not greatly enlarged with weaker spines and tarsal tooth represented by a fairly sharp, obtusely angular swelling, directed slightly forward. Abdomen more rounded; tube longer, 0.86—0.90 the length of the head; longest setæ on segment IX usually longer, 522—533 μ long; terminal setæ 333—356 μ long, about the same length.

Measurements of female specimen in mm. — Length 5.13 (fully distended); head, median dorsal length 0.539, width across eyes

0.246, width across cheeks at hind angles of eyes 0.230, least width behind eyes 0.220, greatest width across cheeks 0.276, width across basal collar 0.266; head process in front of eyes, length 0.069; width at base 0.131, width at base of antennæ 0.138; prothorax, median length of pronotum 0.230, width (including coxæ) 0.556; ptero-

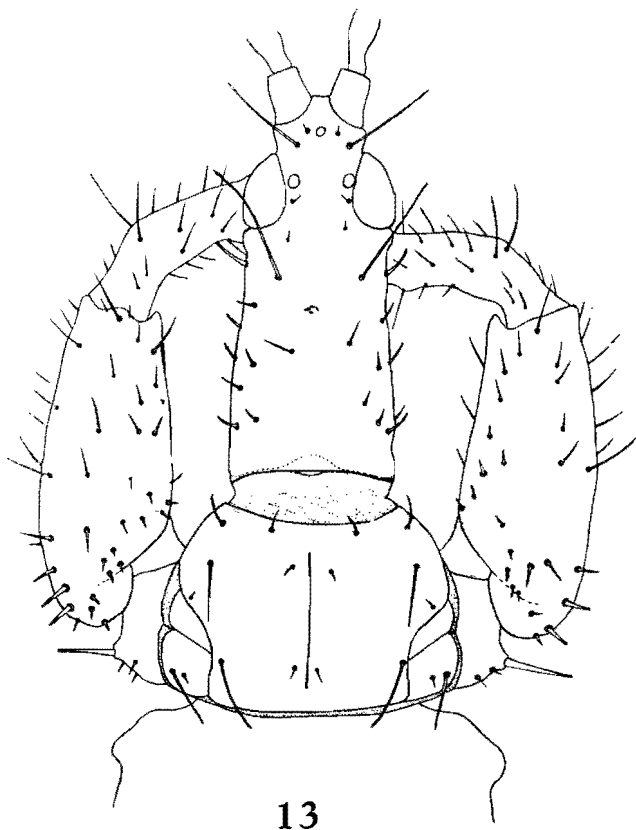


Fig. 13. *Elaphrothrips oculatus* Moulton, head and prothorax of male.

thorax, greatest width 0.611; abdomen, greatest width (segment II) 0.722; tube, dorsal length 0.473, greatest subbasal width 0.156, least apical width 0.064.

Antennal segments	1	2	3	4	5	6	7	8
Length in μ	61	79	200	161	128	92	67	77
Width in μ	66	45	42	42	41	33	29	21

Total length of antenna 0.865 mm.

The above description is based on 8 specimens, 3 males and 5 females, all macropterous, collected at the „Manor House”, Fort Beaufort, Cape Province, in dry pods of *Cassia lævigata* L. on 30-III-1938 (C. Jacot-Guillarmod).

The above females agree very closely with Moulton's description of *E. oculatus* Moul., based on a unique female with most of the setæ rubbed off, the only difference being in the slightly broader head at the eyes and the position of the post-ocular setal pits; these latter he states are „placed about midway between posterior margin of eyes and posterior margin of head”. In the present specimens the dorsocephalic setæ are placed about midway between the posterior margin of the eyes and that of the head, thus it is probable that Moulton mistook the pits of the dorsocephalic setæ for those of the post-oculars. The slightly wider head does not seem to me a great enough difference to separate the present specimens from Moulton's species, especially when one takes into consideration the variation of the width of the head in *E. édouardi* described above. It will, however, only be possible finally to decide whether the present specimens are true *oculatus* after they have been compared with Moulton's type in the British Museum. For the present at least I think they are very well placed under this species.

***Elaphrothrips niger* sp. n. (Fig. 9, 10).**

Male (Macropterous) ... Length 5.0—5.2 mm. General colour very dark brown to black. Head black. Antennal segments I and II black, the latter of a dark greyish tinge at the apex; III very dark brown with only the basal seventh brownish yellow; IV—VIII uniformly very dark brown to black. Cheek spines black, the other head spines distinctly shaded with dark brown. Prothorax black; prothoracic setæ shaded with pale brown. Pterothorax black and dark brown on the membranous portions. Abdominal segment I dark brown, II and III almost black, the rest of the segments black; abdominal setæ pale yellow except those on segment IX which are pale brown and the terminals which are dark brown. Fore wings pale greyish brown, with a darker longitudinal line for about the median third; hind wing similar in colour to the fore wing but with the dark longitudinal line extending along about the basal half with the exception of the extreme base. All legs black with the exception of the trochanters and the middle and hind tarsi which are dark greyish brown, and the fore tarsi which are dark brown, slightly paler than the other tarsi, more especially the tooth which becomes paler towards the apex. Spines and setæ on the fore legs black except the „sickle-shaped” spine which is pale brown. Mesodermal pigmentation red.

Head short and broad, 1.99—2.11 times as long as width across

eyes and 1.91—2.04 as long as the greatest width across the cheeks; weakly produced beyond the eyes, the process twice or slightly more than twice as wide near the base as its own median length, about 2.2 as wide at the base of the antennæ as the median length and 0.24—0.27 as long as the greatest width of the head across the cheeks. Cheeks subparallel, diverging from near the eyes to near the base, then slightly converging to the basal collar (which is the widest portion of the head); flaring as usual to the eyes, slight indications of tempora present; the length of the cheeks about 1.53—1.60 as long as the least width of the head behind the eyes, set with about 7 or 8 pointed spines, the anterior one distinctly the longest, 56—69 μ long. Surface of head with fine cross lines. Anterior ocellar setæ bluntly pointed, about 131—159 μ long. Post-ocular setæ pointed, rather weak, about 51 μ long. Post-ocular setæ bluntly pointed, long, about 220—261 μ in length, 131—153 μ apart and 36—44 μ from the base of the eyes. Dorsoccephalic setæ well developed, bluntly pointed, 143—220 μ long, 74—87 μ apart and 133—148 μ from the base of the eye, thus longer than their distance from the eye. Eyes prominent, about a quarter of the length of the head; their measurements in μ in one of the paratypes as follows: — length 148, width 77—85, interval 123. Ocelli of the posterior pair with their fore margins in a line which would mark off about the anterior sixth of the eyes; in one of the paratypes their diameter 33 μ , interval 67 μ and 59 μ from the median ocellus which has a diameter of 31 μ . Antennæ about 1.64—1.71 times as long as the head, segments VI and VII produced below at the apex; segment III 4.39—4.60 times as long as wide and 1.24—1.25 times as long as IV; IV 3.38—3.61 times as long as wide and 1.14—1.18 times as long as V which is 3.3—3.47 as long as wide; lengths and chætotaxy of the segments as in the figure. Sense cones short and weak (the outer on III about 34 μ long), distributed on inner (outer) surfaces as follows: — III 1 (1), IV 1 (2) plus 1 ventrally, V 1 (1), VI 1 (0 + 1), VII 1 on dorsum; IV and V have a varying number of rudimentary cones, IV with none to 2, while its formula on the left antenna of the holotype is 1 (3 + 2) plus 1 ventrally; V has a varying number (2 or 3) rudimentary sense cones, usually placed on the outer margin. Mouth cone short, rounded, reaching about the middle of the prosternum.

Prothorax along the median line of the pronotum about 0.5 the length of the head and (including the coxæ) not quite two-and-a-half times as wide as long. Faintly sculptured over its whole surface and in addition with a slight indication of a roughened area at the anterior end of the median thickening (very slight in comparison with that found in *powelli* Jac.-Guil. or *gnidicola* (Hesse)). Epimera not fused with the pronotum. Usual setæ present, bluntly pointed,

measuring as follows in μ : — antero-marginal 41—67, antero-angular 77, mid-lateral 133—148, epimeral 159—184, postero-marginal 194—205, coxal 112—131. Fore legs greatly enlarged, their measurements in the holotype in μ as follows: — femur, length 577, width 251; tibia, length 367, width 107; tarsus, width 72, tarsal tooth length 87; „sickle-shaped” spine well developed; tarsal tooth with a slight backward curve. Spines on femur pointed, those at the outer hind angle about 61 μ in length, long thin seta at about the middle of the outer margin measuring about 194 μ ; fore tibiae with a distinct swelling near the apex on the inner margin. Middle and hind legs normal. Wings broad, the fore pair about eleven times as long as the width at the middle, with 40—44 duplicated cilia along the hind margin; subbasal setae measuring as follows in μ : — a) 72—90, b) 105—120, c) 161—207; (a) and (b) blunt, (c) pointed or slightly lanceolate. In specimens that have no cover-glass pressure the pterothorax is slightly narrower than the prothorax (including the coxae).

Abdomen widest at base where it is narrower than either the pterothorax or the prothorax (including the coxae). The lengths of segments VII—IX in μ in one of the paratypes 264, 256, 205, respectively. Pores on terga I absent, on II 67—72 μ , III 61 μ , IV 61 μ apart. The longest seta on segment IX shorter than the tube, 456—477 μ long. Tube relatively long, 0.88—0.89 the length of the head and about 3.3 times as long as its greatest subbasal width which is 2.14—2.22 its least apical width. Terminal setae distinctly shorter than those on segment IX, about 344 μ long.

Measurements of holotype (male) in mm.: — Length (distended) 5.247; head, median dorsal length 0.589, width across eyes 0.289, width at hind angles of eyes 0.278, least width across cheeks 0.261, greatest width across cheeks 0.289, width across basal collar 0.307; head process in front of eyes, length 0.077, width near base 0.154, width at base of antennae 0.169; prothorax, median length of pronotum 0.289, width (including coxae) 0.711; pterothorax, greatest width 0.689; fore wing, length 1.900, width at middle 0.174; abdomen, greatest width (segment II) 0.533; tube, dorsal length 0.522, greatest subbasal width 0.159, least apical width 0.072.

Antennal segments	1	2	3	4	5	6	7	8
Lengths in μ	79	95	215	174	148	113	82	77
Widths in μ	80	46	49	51	45	38	33	22

Total length of antenna 0.983 mm.

Female (Macropterous). Length 5.8 mm. Very similar to the male in colour except that it is generally blacker; only the extreme

base of antennal segment III is brownish yellow; the fore tarsi are completely dark; the wings are practically colourless with no darker longitudinal line. In structure it is also very similar to the male, differing in the slightly shorter head process in front of the eyes, 2.21 times as broad near the base as long and 2.33 times as broad at the base of the antennæ as long; the generally shorter head setæ; longest cheek spine 49—51 μ long; ante-ocellars 128 μ long, the post-oculars 210 μ long and 138—146 μ apart; dorsocephalics 154 μ long and 95 μ apart; the relatively longer prothorax, 2.29 times as wide (including the coxæ) as long and 0.46 as long as the head; the distinctly shorter coxal setæ, 56—82 μ long. The fore legs are enlarged but not to such an extent as in the male, set with weaker spines and as in the case of alle females, a „sickle-shaped” spine on the femur is absent. The fore tarsus has a well developed tooth, not quite as strong as that of the male but of a similar shape, not quite as long as the width of the tarsus (similar to that in the female of *nigripes* Jac.-Guil.) Further the female differs in having fewer duplicated cilia (33—38 in number) on the hind margin of the fore wing. The tube is also longer, 1.00—1.03 times as long as the head.

Measurements of allotype (female) in mm. Length (nearly normal) 5.173; head, median dorsal length 0.578, width across eyes 0.284, width at hind angles of eyes 0.267, least width across cheeks 0.256, greatest width across cheeks 0.296, width across basal collar 0.300; head process in front of eyes, length 0.067, width near base 0.148, width at base of antennæ 0.156; prothorax, median length of pronotum 0.267, width (including coxæ) 0.611; pterothorax, greatest width 0.678; fore wing, length 2.055, width at middle 0.164; abdomen, greatest width 0.711; tube, dorsal length 0.595, greatest subbasal width 0.169, least apical width 0.069.

Antennal segments	1	2	3	4	5	6	7	8
Lengths in μ	79	85	215	169	146	105	79	79
Widths in μ	74	47	51	50	42	38	33	22

Total length of antenna 0.957 mm.

Described from six specimens, all macropterous, collected as follows: — 4 males, 1 female, in dry pods of *Cassia lævigata* L. (det. Miss H. Forbes) on 8-IV-1939 at Escombe, Natal (*C. Jacot-Guillarmod*); 1 female in dry pods of *Cassia* sp. on 21-IV-1935 at Pietermaritzburg, Natal, (*W. Powell*).

One of the males is gynæcoid and has a strong, slightly bent spine in place of the „sickle-shaped” spine; it differs further in being generally smaller, and the relative measurements do not quite agree with the above description; when, however, one notes the great difference that may exist between the gynæcoid and oede-

merous forms of other species, e.g. *E. productus* Priesner from the East Indies, then one may feel fairly confident that this specimen does belong to the present species.

The dark antennæ distinguish this species from all known *Elaphrothrips* except *maynéi* Priesner, *nigricornis* (Karny), (both African) and *unicolor* Moulton from Brazil. The well developed dorsocephalic setæ in addition to the dark antennæ distinguish it from all known South African species except *gnidiicola* (Hesse). It may easily be separated from *unicolor* by the longer head process in front of the eyes (only one third as long as wide in *unicolor*), the well developed dorsocephalic setæ, and fewer duplicated cilia on the fore wing, (50 in *unicolor*). From *nigricornis* it differs in having antennal segment IV 1.09—1.19 times as long as V as compared with 1.8—1.9, the shorter head, only about twice as long as broad compared with 2.6 and the shorter head process in front of the eyes (over twice as broad as long compared with 1.5). From *gnidiicola* it may easily be separated by the darker antennæ, the shorter head (2.4 times as long as wide in *gnidiicola*) and the shorter head process. The species which appears to be most closely related to the present one is *maynéi*, the present species, however, differs in the narrower third and fourth antennal segments, 4.39 and 3.38 times as long as wide compared with 3.75 and 3.20—3.28 in *maynéi*; post-ocular setæ more than three times as far apart as their distance from the hind margin of the eyes as compared with about twice; longest seta on abdominal segment IX distinctly shorter than the tube and the well developed „sickle-shaped” spine in the male and a much larger and differently shaped tooth on the fore tarsus of the female; the present species probably also differs from *maynéi* in the development of the dorsocephalic setæ, as these are not mentioned in the description of that species and if they had been present could hardly have been overlooked. *E. nigripes* Jac.-Guil. which also has a well developed tarsal tooth in the female, differs in the colour of the antennæ, the longer head, the clear head setæ and in the short dorsocephalic setæ.

***Elaphrothrips transvaalensis* sp. n. (Fig. 11, 12).**

Male (Macropterous). Length 4.8 mm. (distended). General colour dark brown. Head dark brown at the base, becoming darker anteriorly until black between the eyes and on the head-process before the eyes. Antennal segment I dark brown; II dark brown, paler at the apex; III whitish yellow, shaded with brown for about the apical three-eighths, the basal three-eighths shaded with very pale brown; IV—VIII dark brown, VIII and the apex of VII a shade paler than the rest. Prothorax dark brown. Pterothorax dark brown, paler on the membranous portions. Abdomen dark brown at the

base, this portion distinctly paler than the head, thence gradually becoming darker towards the apex where it is almost black. All femora and tibiae dark brown, slightly paler at the joints; all tarsi dark greyish brown; fore tarsal tooth paler, with a yellowish tinge. All setae of a yellowish tinge, those on the ninth abdominal segments and the terminals with pale brown bases. Wings of a faint yellowish tinge. Mesodermal pigment present, bright cherry red.

Head 2.56 as long as the width across the eyes and 2.44 as long as the greatest width across the cheeks, which is near the base; head-process in front of the eyes 1.45 times as wide at the base as long and 1.51 as wide at the base of the antennae as long, sides more or less straight. Cheeks subparallel, diverging from shortly behind the eyes to near the base where the head is widest, thence converging abruptly to form the basal collar; flaring as usual to the eyes; tempora absent; cheek 1.91 as long as the least width of the head behind the eyes, set with 4 or 5 slightly knobbed major spines, the first the longest, 56 μ long. Post-ocular setae longer than the eye, blunt, 184 μ long, 115 μ apart and about 56 μ from the posterior margin of the eyes; dorsocephalic setae pointed, about 72 μ long, 67 μ apart and about 205 μ from the posterior margin of the eyes. Eyes prominent, somewhat protruding, about 0.23 the length of the head; 136 μ long, 69 μ wide and with an interval of 97 μ . Ocelli of the posterior pair with their fore margins in a line which would mark off about the anterior quarter of the eyes, about 46 μ apart and 82 μ from the median ocellus, with a diameter of 18 μ . Antennae slender, about 1.51 times as long as head, segments V—VII produced below at the apex; III and IV equal in length and 4.35 times as long as wide; IV 1.13 times as long as V; VII distinctly longer than VIII; the shape and chaetotaxy of the respective segments as shown in figure. Sense cones slender, the outer one on III 51 μ long; their distribution on the inner (outer) surfaces as follows: III 1 (1), IV 1 (2) plus 1 ventrally, V 1 (1), VI 1 (0 + 1), VII 1 on dorsum; V on the left side is as given above and on the right side is 1 (1 + 1). Mouth cone short, rounded, reaching about the middle of the prosternum.

Prothorax along the median dorsal length of the pronotum 0.35 the length of the head and about 2.25 as wide (including the coxae) as long. The usual setae present, rather abruptly pointed at the tip (except the antero-marginals, which are normally pointed, and the coxals which are knobbed), measuring as follows in μ : antero-marginal 44, antero-angular 67, mid-lateral 107, epimeral 118, postero-marginal 107, coxal 97. The epimerals and the coxal arise from distinct tubercles. Fore legs only slightly more enlarged than the middle and hind legs; fore femora 533 μ long and 141 μ wide, with a rather weak, „sickle-shaped” spine at the apex; fore tibiae

378 μ long and 67 μ wide, set with spines placed on low but distinct tubercles; fore tarsus with a nearly straight, rather narrow tooth at the base, about as long as the width of the tarsus and directed distinctly forward. Middle and hind legs normal. Wings fully developed, the fore wing nearly 13 times as long as width at the middle, with 26—27 duplicated cilia; the measurements in μ of the subbasal setæ of the fore wing as follows: a) 66, b) 79, c) 143—154, all blunt. Pterothorax distinctly wider than the prothorax (including the coxæ).

Abdomen narrow, widest at segment II where it is narrower than the pterothorax, thence gradually narrowing to the tube. Lengths of the terga VII—IX in μ as follows: 261, 271, 205 respectively. Longest setæ on segment IX 433 μ long, longer than the tube. The tube 0.65 the length of the head and 3.2 times as long as its own greatest subbasal width which is about twice its least apical width. Terminal setæ 344 μ long, shorter than the tube.

Measurements of holotype (Male) in mm. Length (distended) 4.8; head, median dorsal length 0.589, width across eyes 0.230, width across cheeks at hind angles of eyes 0.215, least width behind eyes 0.207, greatest width across cheeks near base 0.241, width across basal collar 0.238 headprocess in front of eyes 0.085, width at base 0.123, width at base of antennæ 0.128; prothorax, median length of pronotum 0.207, width (including coxæ) 0.466; pterothorax, greatest width 0.600; abdomen, greatest width (segment II) 0.556; fore wing, length 1.651, with at middle 0.128; tube; dorsal length 0.384, greatest subbasal width 0.120, least apical width 0.061.

Antennal segments	1	2	3	4	5	6	7	8
Lengths in μ	51	77	174	174	154	105	82	74
Widths in μ	62	40	40	40	36	29	24	17

Total length of antenna 0.891 mm.

Described from a single gynæcoid macropterous male collected at the Woodbush, Pietersburg, Transvaal, by „sweeping”, 17-IV-1924 (*J. C. Faure*).

The length of the fourth antennal segment being equal to the third distinguishes this species from all African species excepting *E. bottegoi* (Buffa) and also *E. congoënsis* Priesner, which sometimes has these two segments subequal. From *congoënsis* it may easily be separated by the colour of the fourth antennal segment, the presence of a „sickle-shaped” spine, and the well developed cheek spines. From *bottegoi* it may be separated by the colour of the antennæ, in which only the terminal third of IV and the apical half of V are dark. I am greatly indebted to Dr. Priesner of Cairo for having compared this specimen with his *Elaphrothrips* material, and for confirming my view that it is an unnamed species.